

Claims:

1. **A method** for forming a sealing and closing zone (10; 10V; 10D) provided with a compound (A,B) in a sealing cap (Cap; 1) comprised of a substantially metallic material, comprising:
subsequently performing two application methods for two compound layers for applying a first compound (A) and for applying a second compound (B), wherein preferably both compounds are not identical; said two compound layers (A,B) extending into different geometrical areas (area 2, area 3) of the sealing cap in its edge area (R) including a sealing and closing area (10D,10V).
2. The method of claim 1, wherein the first application method is a lining method including the injection of the first compound (A) in a circumferential channel,
 - (i) without mechanically post-forming by a annular die with an effect in a radial inward direction; and/or
 - (ii) rotating the sealing cap and effecting a thus resulting displacement of the injected compound (A) towards a radial outward direction.
3. The method of claims 1 or 2, wherein the second application method is a moulding method, in which an applied second compound (B), in particular injected into a circumferential channel, is initially positioned during application and is then displaced in a deforming manner by a die (40) at least within a closing zone (10V) of the sealing and closing zone (10) of the cap.
4. The method of claim 3, wherein the second application method as a moulding method first positions the applied compound (B) during the application and then displaces it in a deforming manner by a die (40) at most into an area of the sealing zone (10D) of the cap.
5. The method of claims 3 or 4, wherein during the deforming displacement of the second compound (B) an annular barrier acts to restrict a radial inward flow of the second compound (B) so as to not extend beyond a sealing zone (area 2) after a flow induced by the annular die (40) has stopped.
6. The method of claim 5, wherein the ring-shaped barrier is located at a front side of the annular die (40), in particular as a circumferential edge (41) or as an

annular protrusion (42, 42") downwardly protruding from a front side of the annular die.

7. The method of claim 5, wherein the ring-shaped barrier is located at the sealing cap (1) as a ring groove (20a) within a circumferential groove (20) located outside the radially outer edge (3a) of a cap level (panel; 3) for defining a combined groove.
8. The method of claim 1, wherein the sealing zone (10D) and the closing zone (10V) are provided for a sealing at the container edge and for mechanically rotational threading of at least thread segments at the container edge and are correspondingly geometrically located in the edge area (R) of the sealing cap (1), said edge are comprising:
 - an edge (3a) of a cap level (3);
 - a substantially axially extending apron (4);
 - a circumferential groove (2; 21, 20, 20a, 22) radially outside of the level edge (3a).
9. The method of claims 7 or 1, wherein the two compound layers (A,B) overlap, in particular in the region of a circumferential groove (20, 21; 22) in the edge area (R).
10. The method of claim 1 or claim 2, wherein the applied and radially displaced first compound (A) is pressurized by a further die (50, 51) in order to provide further enhanced uniformity of the first compound.
11. The method of claim 10, wherein during pressurizing a radially outermost borderline (a1) of the radially further inwardly located first compound (A) is made more uniform.
12. The method of claims 10 or 11, wherein in a stripe area (a2, a3) near the outer edge (a1) of the radially more inwardly located first compound (A) during pressurization by the further die (50, 51) at least one of an adhesion and a reduction of bubbles of the still flowable first compound (A) is enhanced.
13. The method of claim 1, wherein a further die (52) comprises at its front side a circumferential recess (55) for forming a channel in a pressurizing state to restrict a radial extension and to press the still flowable first compound (A) prior to applying the second compound (B).

14. **A cap** for sealing a container, preferably in the form of a PT cap, for sealing by axial pressure (P closing) and for opening by rotational action (T opening), said cap having an edge area (10V) for at least mechanically supporting radially outside at least one of a circumferential groove and a circumferential channel (21, 20; 2), and said cap being provided with two compound layers (A, B)m wherein
- (a) said two layers overlap within said circumferential groove (20, 21), a radially more outwardly located compound (B) not extending across a radially innermost end of said circumferential groove;
 - or
 - (b) a radially innermost compound layer (A) does not extend radially farther in the outward direction compared to a radially outermost end of the groove (20, 21);
 - or
 - (c) one of the two compound layers (A, B) extends substantially in the axial direction and the other one of the two layers extends substantially in the radial direction, wherein each of the two layers has a non-constant thickness along its respective main extension.
15. The cap of alternative (c) of claim 14, wherein the "substantial extension" of each layer is a main extension direction and said main extension of a respective layer is significantly greater than a different extension extending orthogonally with respect to the same layer.
16. The cap of claim 14, comprising any combination of the features (a) to (c).
17. The cap of claim 14, wherein said groove (20) comprises a bottom face that is substantially horizontal or flat.
18. The cap of claim 14, wherein said groove (21) comprises a bottom face provided with a rounded bottom portion having an annular zone having – with respect to circumferential direction – an orthogonally aligned radius of curvature (21a) and radially within said rounded bottom portion a an inclined section (21b).
19. The cap of claim 14, wherein the two compounds (A, B) in the two layers have at least one of different chemical characteristics and different physical characteristics.

- 20. An annular forming die (40)** for deforming and displacing a compound pre-form into a substantially cylindrical compound layer of a closing zone (10V) of a sealing and closing zone (10) of an edge area (R) of a sealing cap, wherein in a change in the form of a deformation and displacement said compound pre-form representing a compound applied circumferentially to an apron area (4, area 3) of a sealing cap (1) is deformed substantially only in the axial direction and in the radial direction at most to an amount that is significantly less than the amount of axial displacement of the pre-form of the compound, wherein said annular die (40) comprises
- (i) a body section (40a) and a front section (41, 42, 43) axially adjacent thereto and being (significantly) narrower compared to said body section; wherein
 - (ii) said annular die (40) comprises radially outwards an axially extending circumferential recess (46) for receiving and changing position and shape of the pre-form of the applied compound (B) in the apron area (4, area 3) of the sealing cap (1);
 - (iii) said front section is configured as a barrier (41, 42, 42'') so as to block upon the change a flowing of the compound (B) of the compound pre-form in the radial inward direction beyond a radial inner end (43) of the front section.
21. The die of claim 20, wherein said barrier is configured as a sharp circumferential edge (41) radially outwardly.
22. The die of claim 20, wherein said barrier is configured as an annular fin (42) located at a front face of said front section or as substantially wedge-shaped annular protrusion (42') protruding downwardly.
23. The die of claim 20, wherein said annular die (40) increases substantially continuously (45) in width, beginning at said front section (41, 42, 43), along at least the axial extension of the annular circumferential recess (46) and to said body section.
24. The method of claim 13, wherein an edge fin (54) of the recess (55) cooperates with an annular groove (20a) in a broader circumferential groove (20) so as to restrict a radial extension of the first compound (A).
25. The method of claim 13, wherein an annular barrier at the sealing cap (1) is located in a circumferential groove (20) as an annular groove (20a), which is located outside the radially outer edge (3a) of a cap level (Panel; 3) to form a

combined groove (22; 20a, 20), said annular groove at least hindering a too pronounced radial expansion of the first compound (A) during the radial displacement.

26. A sealing cap (1) for a method according to claim 1, said cap having a sealing zone (10D) and a closing zone (10V) for sealing at a container edge or for a mechanical threading off of at least thread segments at a container edge (90), said zones being located in an edge area (R) of said sealing cap (1) in a geometrically corresponding manner, said sealing cap comprising
- an edge (3a) of cap level (3);
 - an apron (4, 5) extending substantially axially;
 - a circumferential groove (20) radially outside said edge (3a) of the cap level;
 - wherein an annular barrier is provided in said circumferential groove (20) as an annular groove (20a), said annular barrier being located outside the radially outer edge (3a) of the cap level (3) for forming a combined groove (22; 20a, 20).

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